

United States Patent [19]

Miller et al.

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[54] **SELF-VENTING BALLOON DILATATION CATHETER AND METHOD**

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[58] Field of Search 128/334, 348.1; 604/96, 604/99, 118, 122, 348.1

[56] **References Cited**

U.S. PATENT DOCUMENTS

3,482,576 12/1969 Ericson et al. 604/99
3,640,282 2/1972 Kamen et al. 128/344
3,742,960 7/1973 Dye et al. 604/99
3,794,036 2/1974 Carroll 128/207.15
4,349,033 9/1982 Eden 604/96

4,576,590 3/1986 Fiddian-Green 604/96
4,582,181 4/1986 Samson 128/348.1
4,597,755 7/1986 Samson et al. 604/96
4,638,805 1/1987 Powell 128/344
4,715,378 12/1987 Poper, Jr. et al. 128/344

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[57] **ABSTRACT**

Self-venting balloon dilatation catheter having an elongate flexible tubular member having at least one lumen therein extending longitudinally thereof. A balloon is carried by the flexible tubular member and is in communication with the lumen. A fitting is carried by the tubular member for inflating the balloon with a balloon inflating medium. A plurality of small passages are formed which permit air to escape from the interior of the balloon but inhibit the passage of the balloon inflation medium from the balloon.

12 Claims, 3 Drawing Sheets

